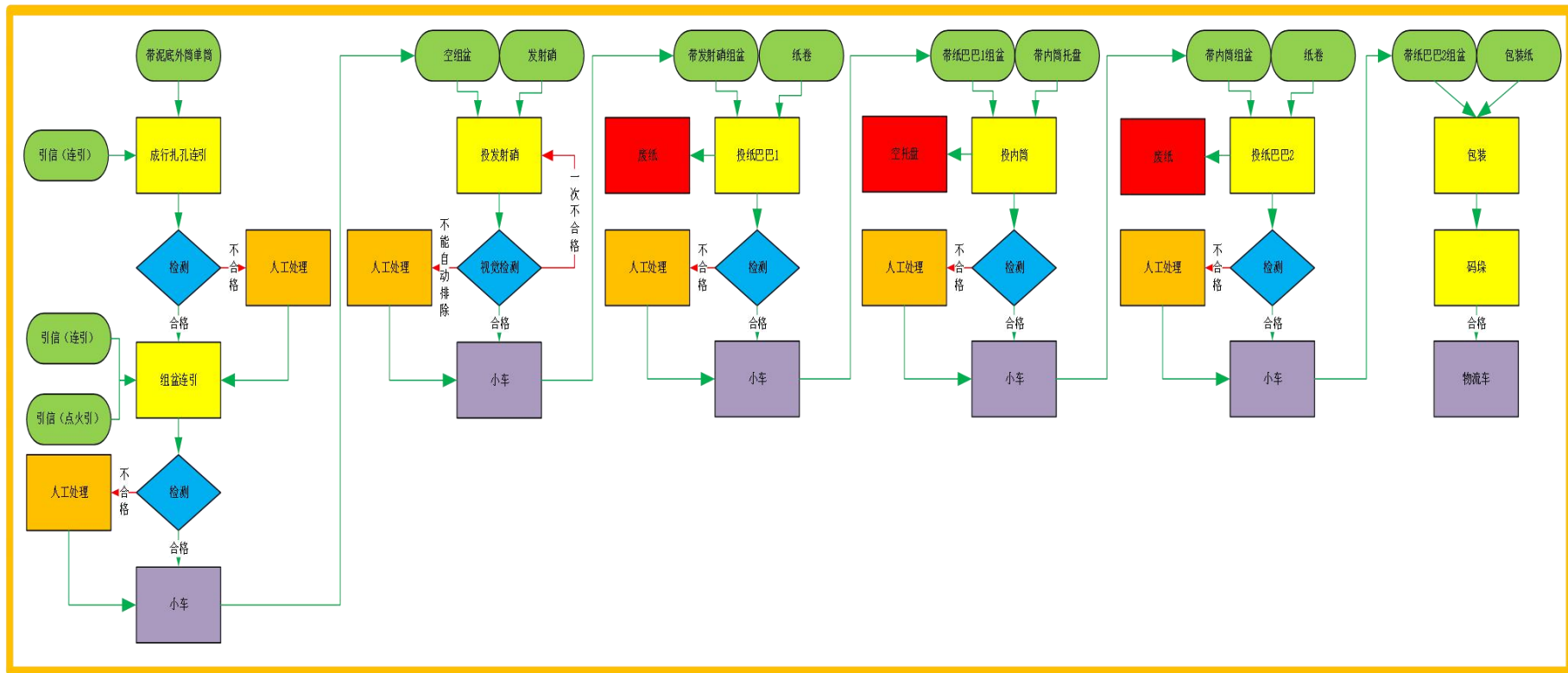




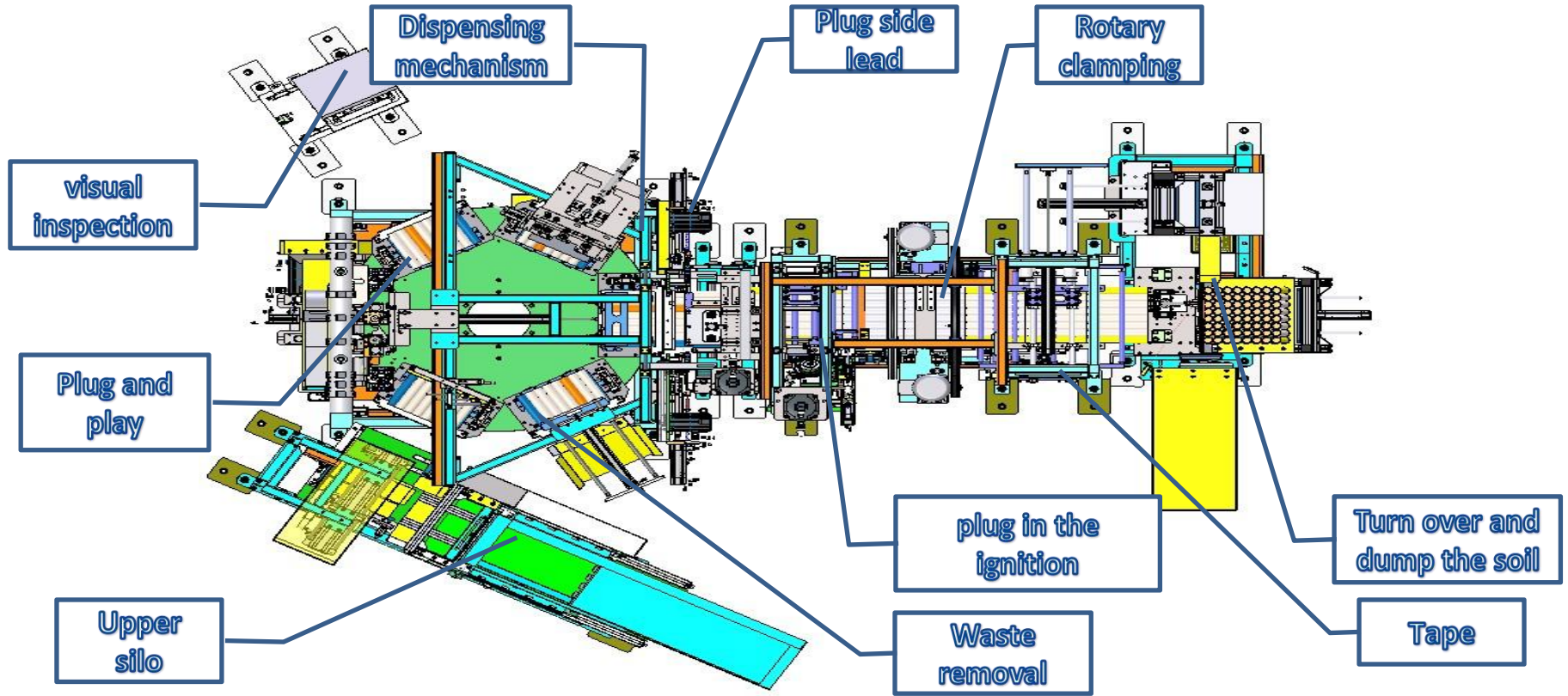
Fireworks and Firecrackers
Production Line -potting
wiro

盆花线工艺流程



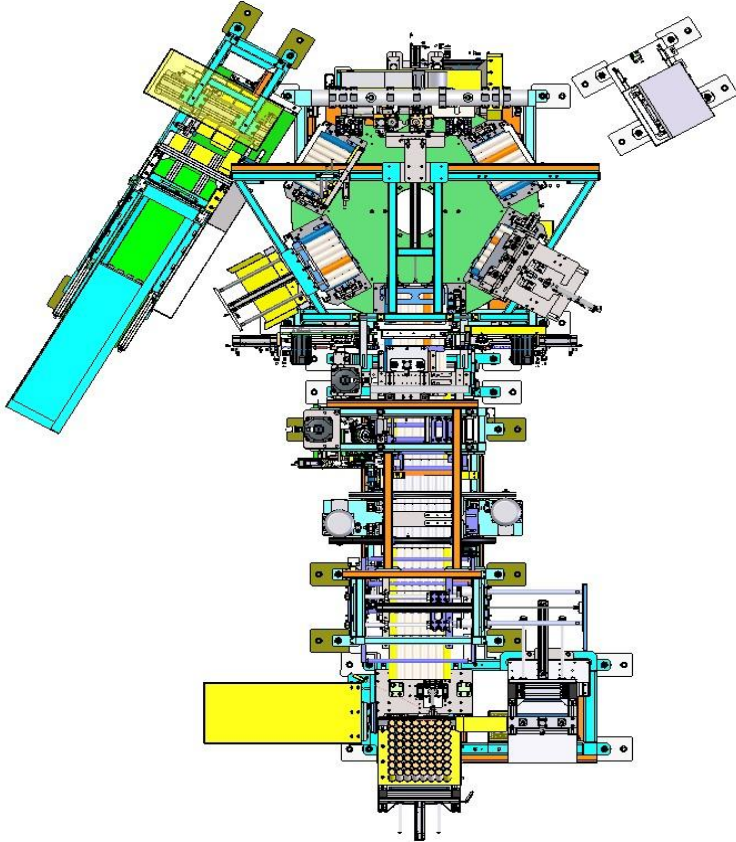
Single station layout

Pot assembly station



Single station function

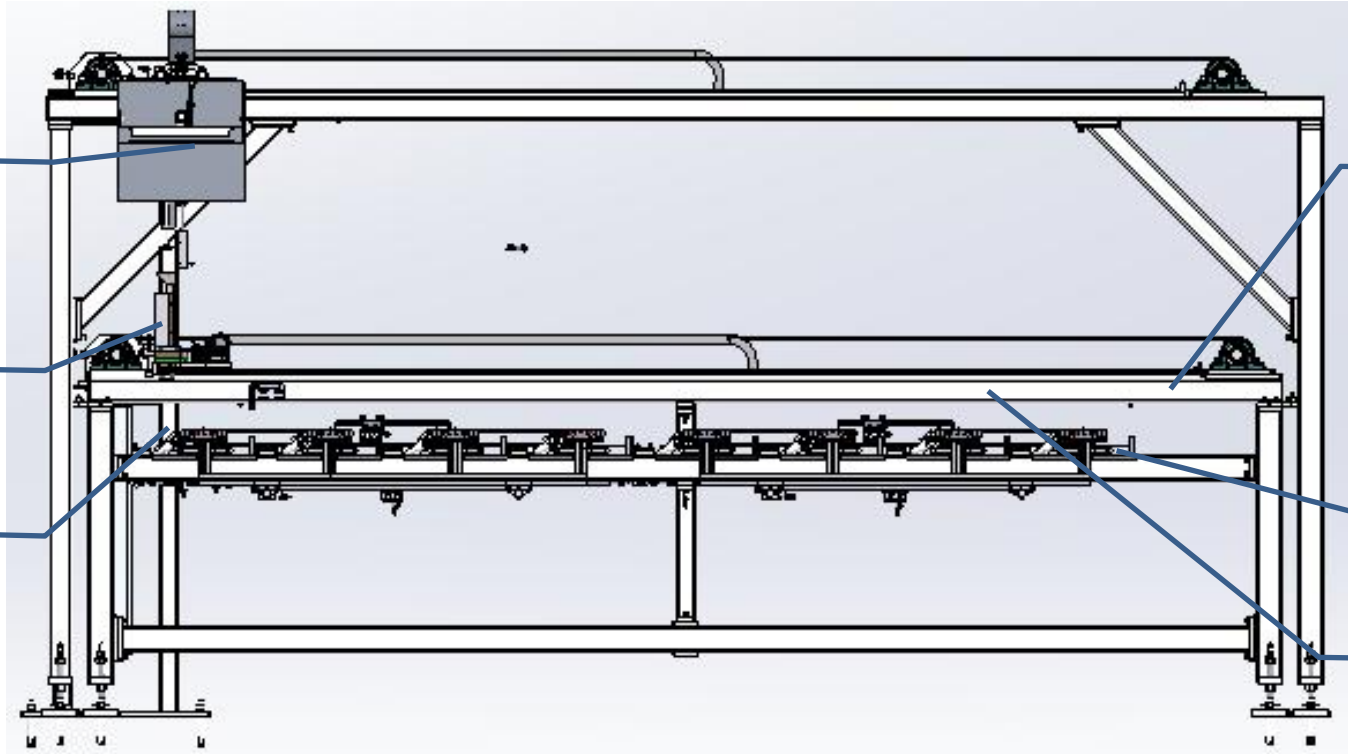
Pot assembly station



- The paper tube enters the turntable station from the upper hopper.
- The arranged paper tubes are inserted and connected.
- Visually carry out continuous reference inspection to judge whether it is qualified. If it is qualified, it will enter the next station, and if it is unqualified, the paper tube will be rejected.
- Qualified a group of paper tubes for dispensing.
- After that, enter the pot grouping station for pot grouping.
- Insert and guide the grouped paper tubes at the same time as the basin grouping action.
- After the potted flowers of the expected specifications are formed, tape the potted flowers and insert a fire starter.
- After the potted flowers with replacement and ignition lead are formed, they are turned over and dumped, and then pushed to the conveyor line to enter the next station.

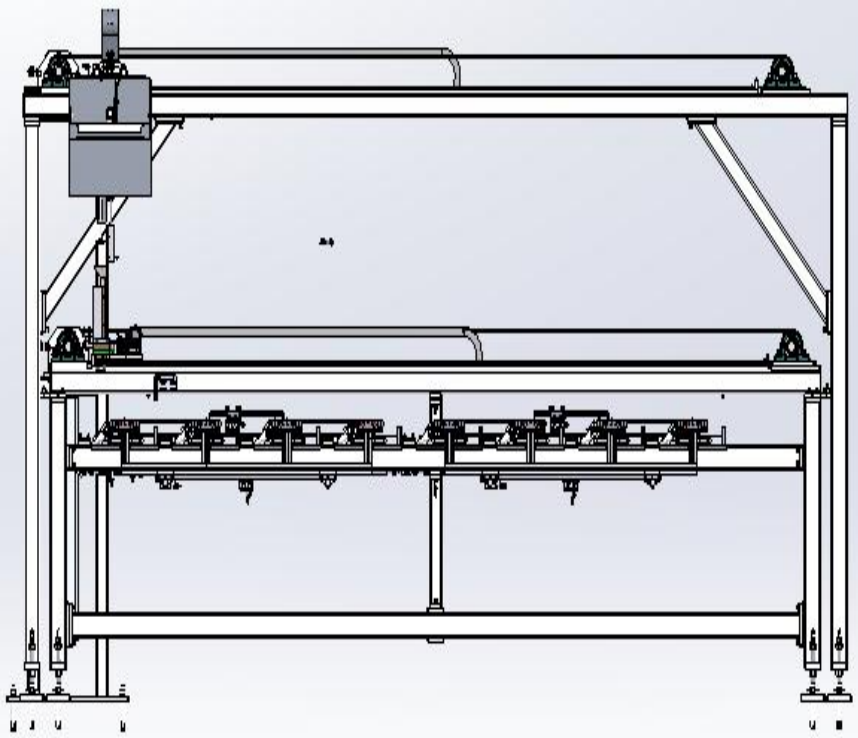
Single station layout

Casting Nitrate Station



Single station function

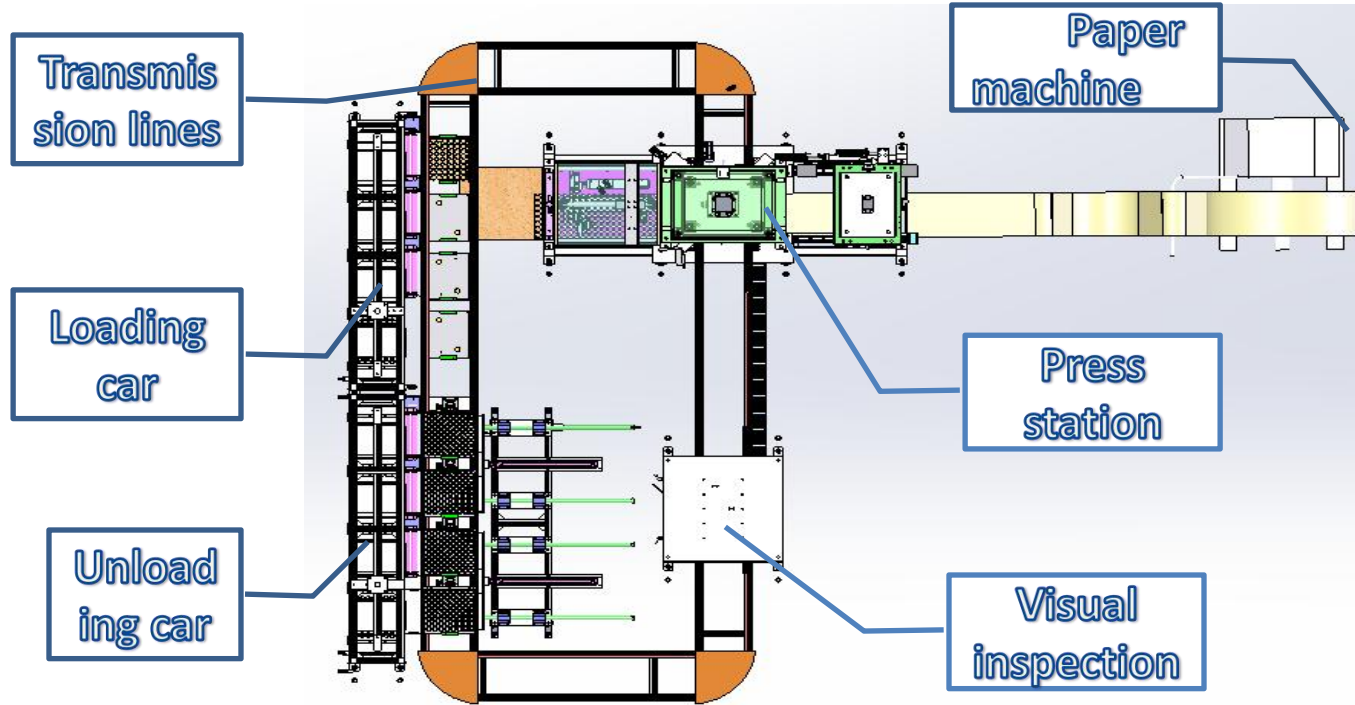
Casting Nitrate Station



- Put the potted flowers on the drug delivery platform in turn.
- The action of loading and unloading mechanism positions each potted flower close to the back on the platform.
- The rotary clamping mechanism clamps the potted flower so that the potted flower is close to the right positioning side.
- The quantitative dosing mechanism is dosing, and then through the driving mechanism, the potted flowers on the platform are put into the shot gun sequentially.
- After the potted plants are put into the nitrate, the visual camera will follow and detect to ensure the right amount of nitrate in each inner cylinder.
- After each potted flower is put into the firing nitrate, the pushing mechanism pushes the potted flower to the carrier, so as to go to the next station.

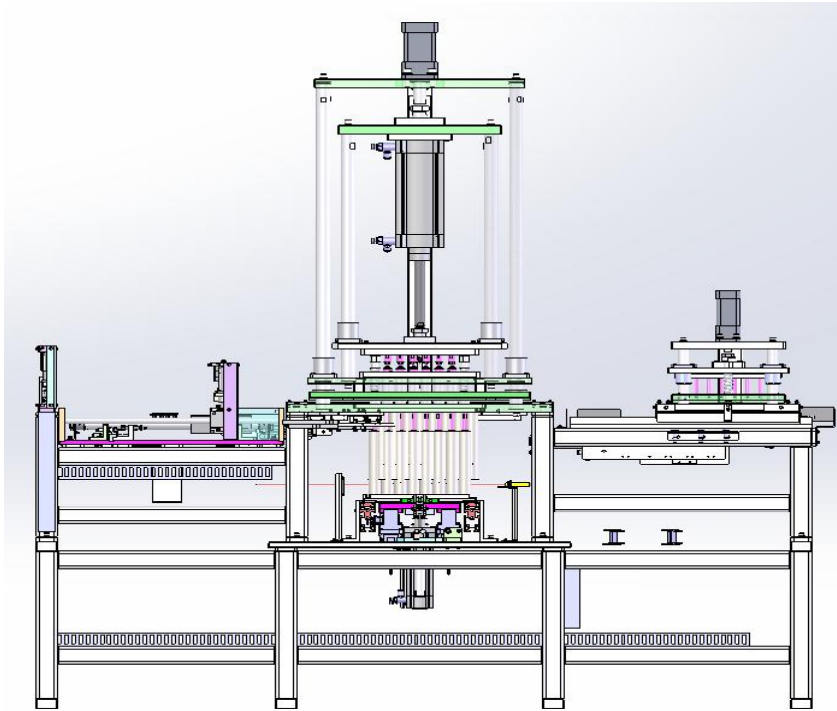
Single station layout

Press paper baba station

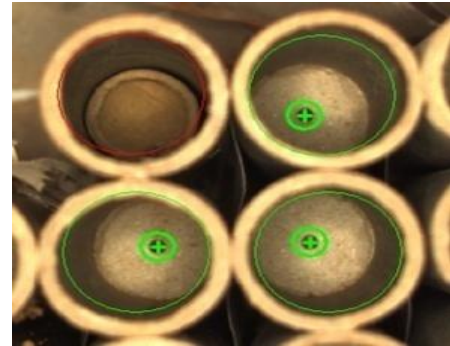


Single station function

Press paper baba station

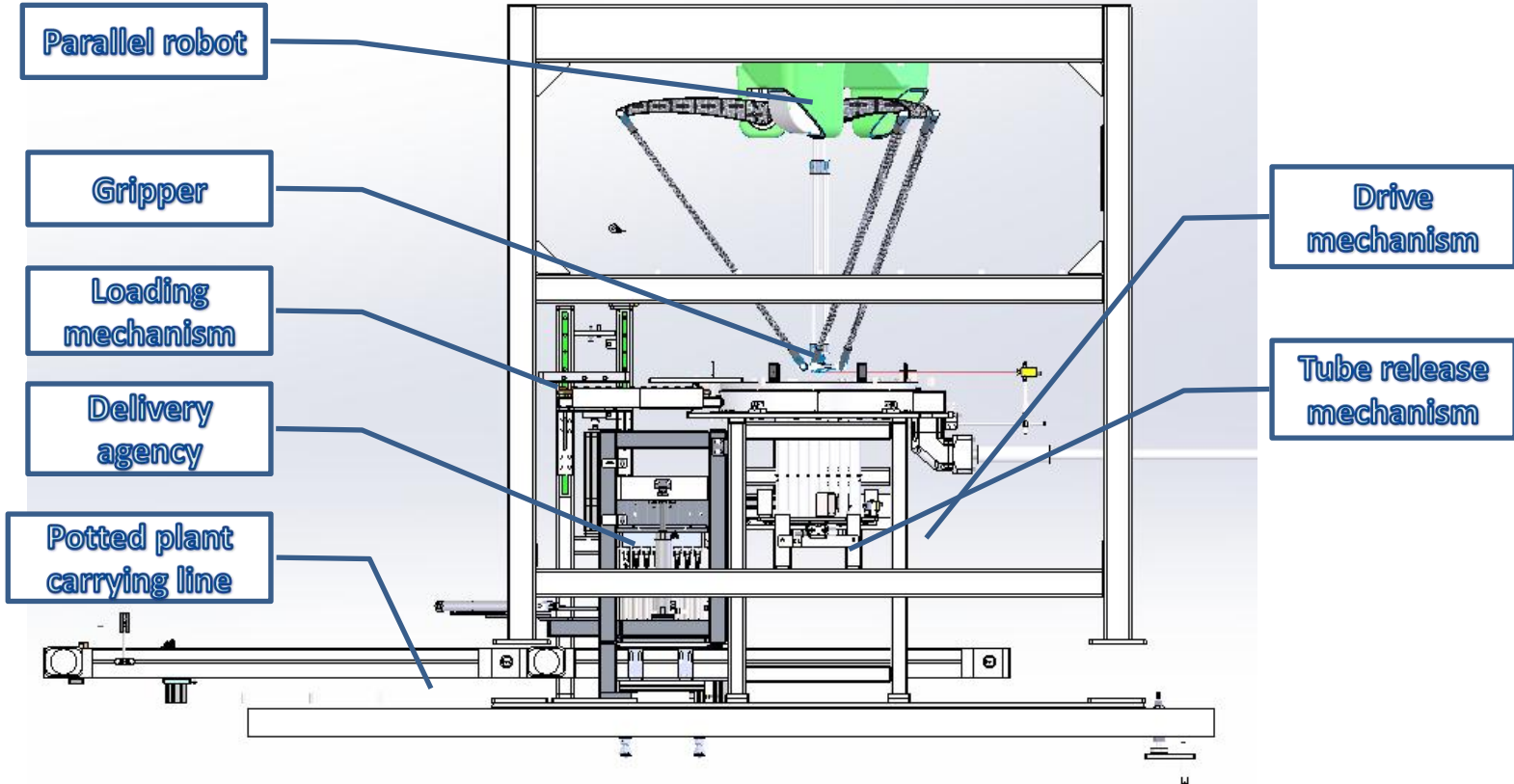


- The raw material enters the paper pressing equipment, and the die is driven by the oil cylinder to punch the paper sheet.
- The raw materials of punched paper sheets are pulled back and forth by the paper cutter, and the waste materials are cut and recycled.
- After the potted flower reaches the position, the punched paper is pressed into the corresponding paper tube driven by the cylinder. And the visual system detects whether the pressed paper is qualified.



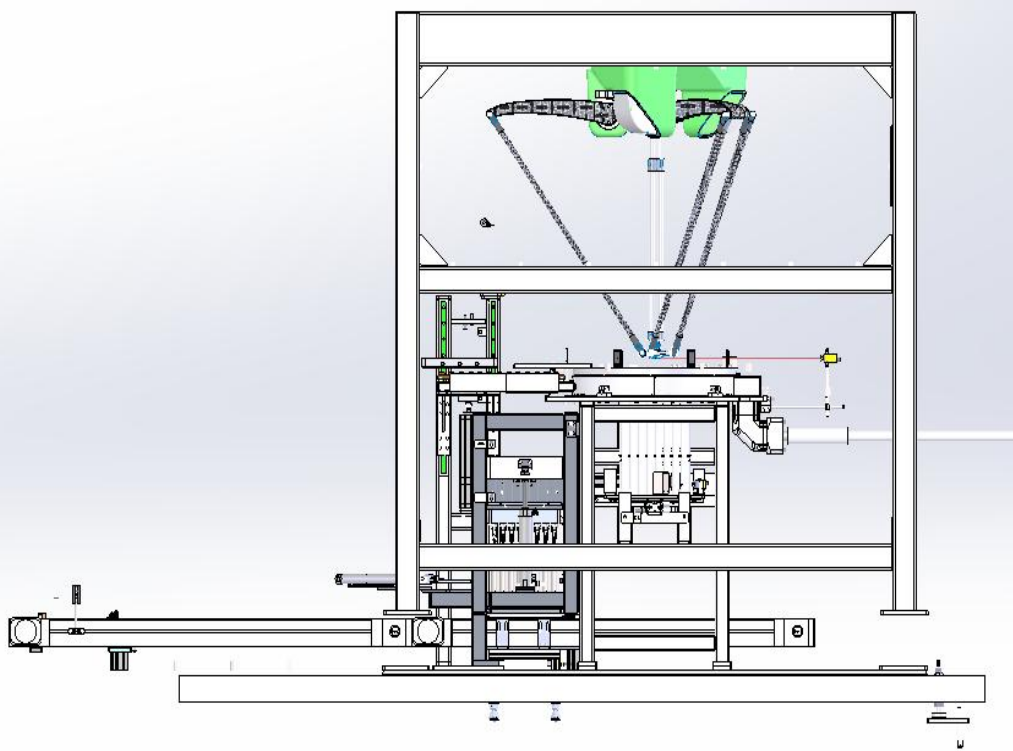
Single station layout

Inner barrel station



Single station function

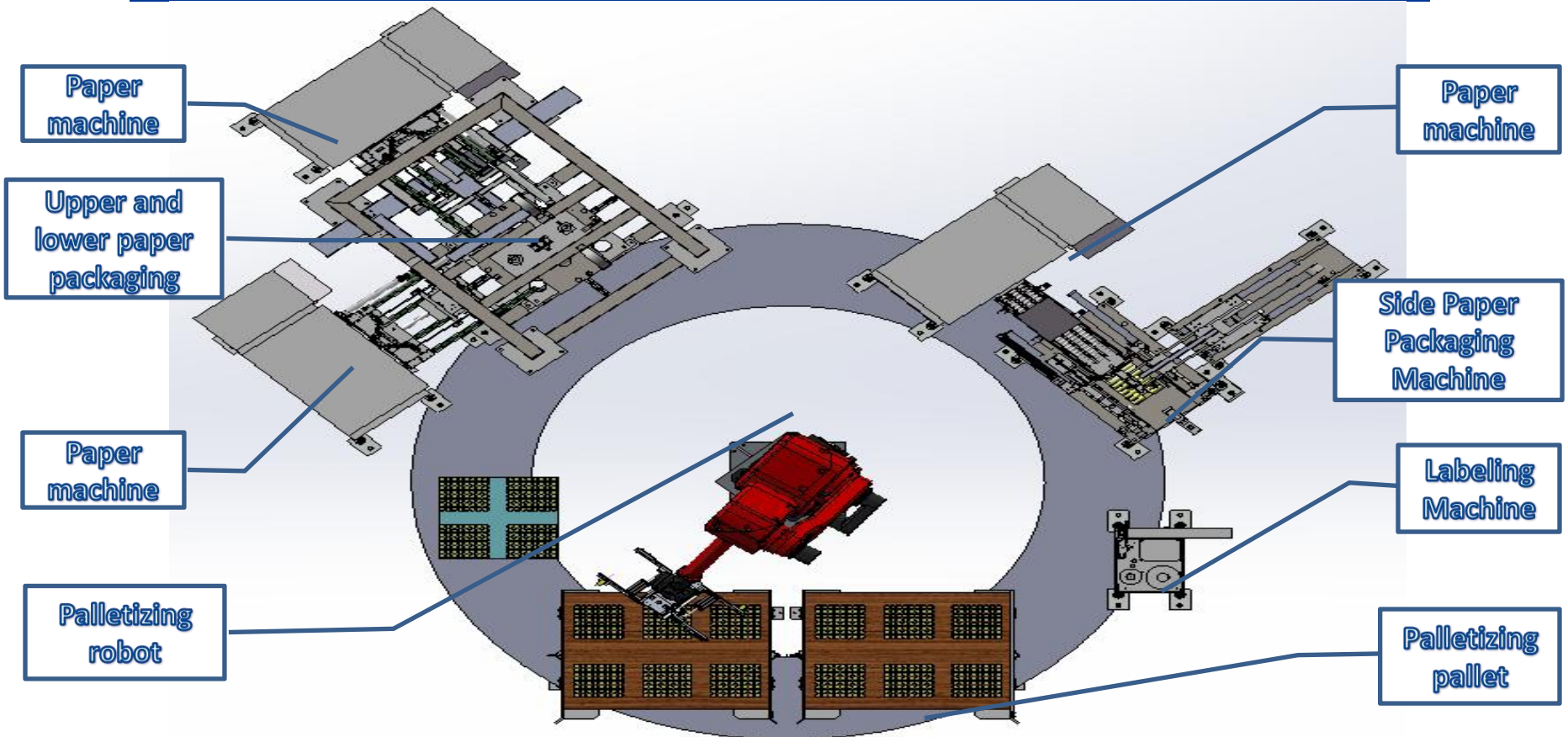
Inner barrel station



- The upper plate mechanism swings the different inner cylinder trays to the corresponding positions in turn.
- At the same time, the potted flowers arrive at the corresponding position through the conveying line and are positioned.
- The parallel robot sequentially grabs the inner tubes by hand and puts them into the tube releasing mechanism.
- The barrel-releasing mechanism moves to the delivery position after the inner barrel is filled.
- After the delivery mechanism reaches the position, the potted flower is lifted up and aligned with the delivery mechanism to drop the inner cylinder.
- After the feeding is completed, the feeding mechanism returns for the next filling of the inner cylinder.

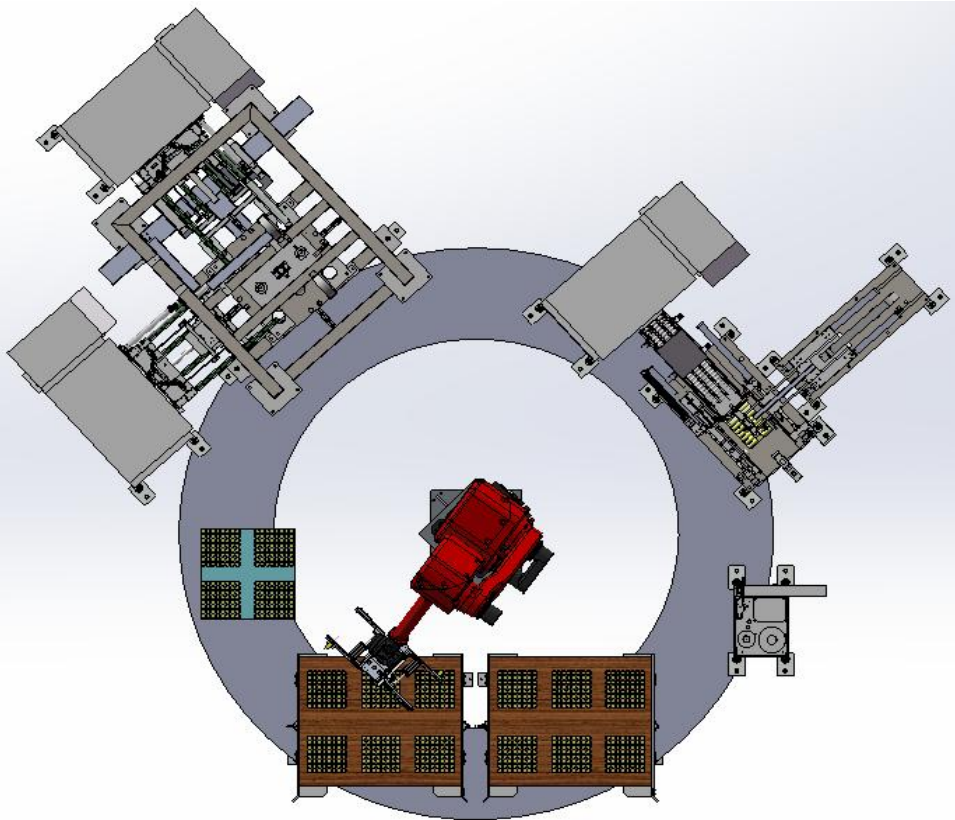
Single station layout

Packing and palletizing station



Single station function

Packing and palletizing station



- The paper loading machine first carries out the action of loading the lower wrapping paper.
- The robot grabs the potted flowers and puts them on the packaging machine, puts them on, and then performs the action of putting on the wrapping paper.
- The packing machine packs the glued upper and lower paper to the potted flowers.
- The robot grabs and puts it into the next station for side wrapping paper packaging, and at the same time loads this station.
- The robot grabs the potted flowers packed with side paper and labels them, and at the same time loads materials to this station.
- The robot puts the labeled potted flowers on the pallets one by one for palletizing.



- The theoretical output of the whole line is 120 groups/hour;
- Theoretical production beat: ≤ 30 seconds/group
- Theoretical annual output: $120 \times 8 \times 250 = 240000$ groups; (one group = 64 rounds)



Automation degree

- Each station on this line is a fully automatic workstation, no human intervention is required during normal work
- This site has a type-changing function, which automatically switches the production mode of the corresponding potted flowers of different specifications.
- Centralized control cabinet control is adopted to ensure production safety.
- If there is an unexpected failure during the production process, the sensor can identify the location of the failure and the possible cause of the failure and display them centrally, which is convenient for maintenance.



Safety and reliability

- The line body of this line is driven by a hydraulic motor instead of a motor, and the hydraulic station is separated from the working space, which can effectively prevent unsafe factors caused by electric sparks.
- The paper pressing action is driven by an explosion-proof cylinder, reducing the risk of the gun being detonated.
- The stop process of each movement mechanism is equipped with a buffer plus a limit stop to prevent excessive impact from detonating and firing nitrate.
- The sensors used in the whole station are all intrinsically safe sensors.
- The non-metallic materials used in the whole station are all anti-static materials.
- Single station is equipped with emergency stop and alarm function.
- After the paper is pressed, the visual camera will take pictures and monitor to ensure that the quality of the pressed paper in each paper tube meets the process requirements.

A night-time photograph of a city skyline across a body of water. In the foreground, a bridge with multiple illuminated piers spans the water. The city skyline in the background features various buildings, some with lit-up facades. The sky is filled with several large, vibrant fireworks exploding in shades of red, white, and blue. The text "Thank you" is overlaid in the center of the image in a white, sans-serif font with a blue outline.

Thank you